Planning the Green State on a Sinking Ship: Sea Level Rise Politics in the Maldives

A Senior Honors Thesis

Presented in Partial Fulfillment of the Requirements for graduation *with research distinction* in Geography in the undergraduate colleges of the The Ohio State University

By

Christopher P Gordon

The Ohio State University
August 2010

Project Advisor: Professor Mathew Coleman, Department of Geography

Abbreviations and Acronyms

AOSIS – Alliance of Small Island States
UNFCCC – United Nations Framework Convention on Climate Change
IPCC – Intergovernmental Panel on Climate Change
SIDS – Small Island Developing States
G77 – Group of 77

Planning the Green State on a Sinking Ship: Sea Level Rise Politics in the Maldives

According to the most recent IPCC Report (AR4), global mean sea level is projected to rise approximately 60 centimeters over the next century (IPCC, 2007). This projection does not take into account the predicted rapid destabilization of the two largest ice sheets in the world: Greenland and Antarctica (Dasgupta, 2009). The destabilization of any significant portion of either the Greenland ice sheet or the West Antarctic ice sheet will raise sea level much more than 60 centimeters, endangering many low-lying areas (IPCC, 2007). One of these low-lying areas is the Republic of Maldives. Standing less than 2 meters above sea level on average and with 65% of its land area less than 1 meter above sea level, the Maldives is considered the most vulnerable of any populated atoll state to sea level rise (Taylor, 2003; Barnett & Adger, 2003). The potential negative impacts of climate change in the Maldives are compounded by its high population density as well as its high coastline to land area ratio and its position as a poor, developing and peripheral state. While these might prove as handcuffs to development for some nations, they have not stopped the Maldives from becoming a world leader on the issue of climate change.

While it is one of the most vulnerable of small island developing states (SIDS) to sea level rise, the Maldives is also one of the most outspoken countries on the issue. In 2008, President Mohamed Nasheed was brought to office as a result of the country's first democratic elections. From his very first day in office, as I document below, climate

change and sea level rise were a priority for him. Indeed, President Nasheed and his cabinet have become climate change celebrities – domestically, but more so internationally – as a result of their attention to climate change. Nasheed has raised the profile of the Maldives internationally with statements such as "we will have to buy a new homeland", and "we will be environmental refugees". Perhaps most notably, the Maldives held an underwater cabinet meeting in October 2009 symbolizing the potential for the Maldives to disappear due to predicted future sea level rise. President Nasheed ordered his cabinet to become SCUBA certified to hold this underwater cabinet meeting at which the members signed the 350.org accord, a symbolic accord petitioning the world to limit atmospheric CO2 concentrations to 350 parts per million at the upcoming climate summit in Copenhagen. The post-meeting press conference was held with the cabinet members still afloat in the lagoon (BBC, 2009).

Is this political theatre? Certainly, Nasheed has a firm grasp on brand management, but the underwater signing ceremony was not merely about image in any easy sense. My argument below is that this event – and others – are part of a major challenge to the status quo global alignments on the topic of climate change. Indeed, my argument is that the underwater signing event is part of the Maldives' much more general effort to differentiate themselves from the rest of the global South to save their country and harness the potential in emissions cuts. The key issue here is carbon neutrality. In March 2009, Nasheed announced that the Maldives would become the world's first carbon neutral nation by 2019. It is this willingness to assume a *leadership* role that differentiates the Maldives from other developing states such as those belonging to the Group of 77 (G77), a coalition of developing states within the United Nations. The

classic position of the G77 at international climate negotiations is that states have a *common* but *differentiated* responsibility for global climate change (UNFCCC, 3.1). Essentially, the G77 countries argue that they will not cut emissions unless industrialized nations make even greater cuts and provide adaptation funding to vulnerable countries. The Maldives has transcended this argument, divorced themselves from the G77, and globally identified themselves as a potential "showcase" state for green technology. The Maldives recognizes the differentiated risks and responsibilities associated with climate change, but rather than waiting for the logjam of the United Nations Framework Convention on Climate Change (UNFCCC) process to unravel, they have made a carbon neutral commitment, which in the view of many high-ranking government officials gives the Maldives a "moral authority" on this issue. This is the larger context for Nasheed's widely reported underwater signing event.

Through evidence from interviews, I will show how the Maldives has created an effective brand for themselves as a green state. I argue that the Maldives novel plan for carbon neutrality, rather than having a substantive impact on global CO2 concentrations, plays a much more important role in terms of the way it generates authority for the otherwise peripheral small island state. In order to make this argument I first clarify relevant secondary literature relating to politics, environmental security, and ecological debt amongst others. Second, I explore the natural science literature concerning sea level rise in order to accurately understand the on-the-ground implications of the IPCC report for the Maldives. Third, I present interview data gathered from fieldwork I performed in the Maldives during Spring of 2010. I start, however, with a brief note on how I came to the project and methods.

Methods

In Spring 2009, I took an advanced geopolitics seminar with Dr. Coleman and became interested in environmental geopolitics, i.e. the links between environmental change and state conflict. My specific interest was in various states' litigation strategies as concerns the effects of climate change. In Summer 2009, I started background research on a range of states' involvement in climate change-related litigation. I started by reviewing news articles and court briefs, and came upon the case of Tuvalu, a small island state in the Pacific threatening to sue Australia for its carbon emissions. After reading more about Tuvalu and vulnerable island states in general, I came across an article by Barnett & Adger, "Climate Dangers and Atoll Countries". In this article, the authors identify the Republic of Maldives as the most vulnerable of any inhabited atoll country according to a vulnerability index measure (Barnett & Adger, 2003).

Because the Maldives topped Barnett and Adger's vulnerability index, I decided to focus on the case. I approached Dr. Coleman about writing a grant for travel monies to visit the Maldives. I was convinced that the Maldives' situation had to be studied *in situ*; that a ground level case study based on interviews with government leaders would reveal insights about the Maldives' situation relative to sea level rise that was not available through the media. Ultimately we were successful. In November 2009 I was awarded a grant from the College of Social and Behavioral Sciences as well as a research scholarship from the College of Arts and Sciences. Additional support came in the form of a STARS grant in recognition of my research with POLENET during Summer 2009.

In Autumn 2009 through Spring 2010, I conducted a broad review of secondary literature in the social sciences and natural sciences relating to climate change and SIDS. In the social sciences, I reviewed literature in environmental security, climate justice, climate vulnerability, international climate negotiations, international relations and ecological debt. The natural science portion of my literature review concerned the particulars of sea level rise specifically as it pertains to the Maldives. During this period I also undertook a detailed genealogy of the Maldives' published action plans, environmental laws, environmental pledges, and strategic motions before major international bodies, among other documents. These documents were mostly available on-line. As a result of this research, I produced an outline of government agencies involved in the climate change issue as well as a comprehensive list of bureaus and offices to approach for interviews. I sent letters to these groups and arranged interviews for April-May 2010. I also compiled a significant list of questions for my potential interviewees.

Because my research involved interaction with human subjects, I submitted an Institutional Review Board (IRB) Protocol in February 2010. This process enabled me to think through my research design and prepare precise questions for my interviewees. The protocol was reviewed in March 2010 and exempted and approved in March 2010. All materials used in interviews, as well as the general set of interview questions for different constituencies were outlined and fully approved by the IRB board. During the time that the IRB was reviewing my research, I read selected literature on interview methodologies and techniques.

During my research trip, I visited several different offices and interviewed 14 high-ranking officials in the Maldivian government. The offices in which I performed interviews were: Maldives EPA, Department of Housing, Transport and Environment, Office of the President, Office of the Vice President, Ministry of Fisheries, UNDP Environment Office, Marine Research Centre. Generally, these offices were selected because of their expertise and experience with issues of climate change in the Maldives. As per the IRB, all interview subjects served some function as civil servants or government officials. All interviews were generally tailored to the expertise of the individual and their experience with the different sectors of climate change governance. Many of the interview subjects are members of the President's Advisory Council on Climate Change, a key advisory body in the Maldivian Government, which is chaired by the Vice President and which meets frequently with the President. The guidelines for these interviews were not rigid and most proceeded as an informal conversation about the interviewees' experience with the environmental policies of the Maldives. The average interview lasted approximately 45 minutes to an hour. I spent approximately 4 weeks, mostly in Male', from April 11 – May 10 performing my research.

While I arrived with an outline of questions, the more people I talked to, the more I realized that the situation was not what I had anticipated. I originally wanted to research how the Maldives had implemented their strategic action plan, specifically its incumbent environmental initiatives. Upon arrival, I realized that the new government had not yet begun many of these initiatives covered in the international media. In several cases I deemed these programs to be many years from completion. As a result, I narrowed my research to the question of how the Maldives had become a key global

player on climate change. My interest was to document the Maldives meteoric rise on the question of climate change and sea level rise politics on the global stage from the "inside", so to speak. My goal was ultimately an ethnography of the state via interviews rather than a text-based policy analysis.

Of course, interviews with Maldivian elites are hardly representative of the wider political environment in the Maldives. Indeed, while all government officials ascribe to the UNFCCC process and the IPCC report, the attitude is not the same for regular Maldivians. For example, in early May, I was on a ferry from Male' to Rasdhoo, a small provincial capital 3 ½ hours away by diesel Dhoni. Standing on the deck of the boat, I was talking to a group of local fishermen and they asked me why I was in the Maldives. When I told them that I was doing research on sea level rise they all laughed. One of them told me through a translator, "Sea level is not rising. You are crazy." The men went on to explain to me that islands come and go and are always changing shape. It is interactions like these that helped shape later interview questions and complicated my understanding of the Maldives as the 'Green State'.

Literature Review

A proper understanding of climate change politics in climate vulnerable states must begin at the nexus of several veins of scholarship, namely those of environmental security, critical geopolitics, feminist political geography and environmental justice. While utilizing these literatures as a starting point, I seek not simply to add to one or all of these literatures, but take up questions raised (both explicitly and implicitly) by all. Through a synthesis of these four literatures, I hope to establish a previously unexplored nexus of seemingly disparate literatures. Such a starting point will give context to my findings as well as establish avenues for further research in many fields.

Environmental Security

The notion that the environment could be geopolitically relevant emerged in force during the 1990s after the end of the Cold War. With conventional "enemies" like the Soviet Union gone, practitioners and academics of statecraft began to cast about for new sources of geopolitical conflict and insecurity – and the environment emerged at or near the top of that list (Dalby, 2002). This is not to discount the important place that things environmental have long held in the geopolitics literature, for example in Halford Mackinder's turn-of-last-century division of world space into a strategic "heartland" as well as less strategic "outer crescents". This mostly environmentally determinist examination of what world regions could be most powerful has cast a long shadow over the geopolitics literature in Geography and Political Science (Kearns, 2009). However, if Mackinder's legacy during the 20th century was mostly subterranean, it was in the 1990s that the environment became a very public and much-scrutinized security concern, in

both academia and more popular circles. Perhaps the most influential of scholars in the then emerging classic environmental security school was Thomas Homer-Dixon. Homer-Dixon's research asked if environmental scarcities could be linked in any way to violent conflict, and specifically as a cause of the latter. His answer hinged on the problem of population growth. On the one hand, population growth could combine with a decrease in the quality and/or quantity of renewable resources to produce environmental scarcity. Homer-Dixon called this a problem of "resource capture", in the sense that environmental scarcity could lead to elite control over dwindling resources, mass environmental disenfranchisement, and eventually state collapse. On the other hand, population growth could combine with unequal resource access to produce a decrease in the quality and/or quantity of renewable resources and in turn environmental scarcity. Homer-Dixon referred to this as "ecological marginalization" and suggested that the main result would be mass and uncontrolled migrations from the global south to the global north (Homer-Dixon, 1994).

Homer-Dixon found population as the basis for environmental scarcities, and while some other scholars have stressed the need to not oversell the linkages between violent conflict and global climate change, the focus on population as the main "problem" under scrutiny persists (Dabelko, 2008). This focus on population as the central determinant in the issue of scarcity production draws on the antiquated and heavily critiqued ideas of 18th century writer Thomas Malthus. Malthus claimed that resources would be outpaced by population growth; Homer-Dixon claims that this creates scarcity, which then leads to violent armed conflict (Malthus, 1798; Homer-Dixon, 1994). One of the products of these contemporary population studies, disguised as environmental

security studies, is a heavily racialized and Eurocentric understanding of migration as a security threat (Dalby, 2009).

Since the focus of the environmental security literature has been on population growth, reproducing the Malthusian ideas of the 1700s, it necessarily picks up the topic of migration. Indeed, specifically, the topic of sea level rise has been implicated as a prime mover of millions of members of the global south seeking new livelihoods (Raleigh & Urdal, 2008). Additionally, it is noted that population growth in poor, Muslim countries such as the Maldives could cause security and conflict problems at North-South intersections as population distortions lead to resource shortages (Goldstone, 2008). The living standard in the North is a further pull factor, which could lead to increasing resentment in countries experiencing rapid population growth engendering further insecurities (Goldstone, 2008).

The specter of massive population shifts from the poor global South to the wealthy global North was forwarded as a potential security issue in the popular geopolitical imagination in the mid 1990s in *The Atlantic*. The general thesis of these works is that the many poor will suffer because of environmental degradation. A combination of this push factor and the pull factor of higher living standards in the West will trigger massive migrations from the Global South to the Global North thus rendering the wealthy population of the Global North, insecure (Kaplan, 1994; Connolly & Kennedy, 1994). Many of these claims are highly contested. The literature of environmental security is heavily critiqued and I will draw from those critics as well as feminist geopolitics to uncover the confluence of these literatures and how they inform a study of climate vulnerable states.

Critical Environmental Security

A more effective lens through which to understand the situation in climate vulnerable states is provided by the critical environmental security literature. Rejecting the relatively unexplained linkages between environmental degradation and armed conflict because of a lack of substantial evidence, critical environmental security seeks to first critique the methods used by environmental security writers and then expose the power discourses that their writing reproduces (Nordas & Gleditsch, 2007). Stated bluntly: "The entire analysis (Homer-Dixon's) is based on a simple, causal model of social friction and violence with few theorized intervening processes" (Peluso & Watts, 2001, pp. 13).

A crucially important theme in any conversation about security is that of peace (or a lack thereof). Classic environmental security has referred to security threats most often as threatening a 'negative peace' which amounts to little more than the absence of violent conflict (Barnett, 2008; Galtung, 1969). I purport to use the term peace (or a lack thereof) in a 'positive peace' sense, which can be defined in terms of social justice and equality (Barnett, 2007). This distinction between a negative and a positive peace is crucial as discourses of peace and violence permeate the debate on climate change and what to do about it (i.e. combating climate change, front line states etc…). These discourses produce geopolitical power particularly in international negotiations. My research further explains how perceived power is produced through climate change discourse.

For climate vulnerable states, climate change is a very real existential threat. The language used to describe these states is not innocent and is not produced out of a black box; rather, it is highly political. Discourses of violence and vulnerability are crucial to understanding how climate change is mobilized in international relations. Indeed, in April 2007, the topic of climate change landed in the most real of security circles: the UN Security Council (Nordas & Gleditsch, 2007). Furthermore, in March, 2008, the UN canonized climate change as a human rights issue stating that "climate change poses an immediate and far-reaching threat to people and communities around the world and has implications for the full enjoyment of human rights" (UNHRC, 2008). In this paper, I explore how climate vulnerable states utilize the discourse of vulnerability to achieve greater prominence and authority in the international community.

The very conception of security must be established before it can be threatened. The modern concept of security is a political one, an imagination that renders secure only a particular political identity that in turn is contested and produced (Dalby, 1992). Additionally, the state is the prime unit of study, a misplaced interest as the security provided by states is not always in line with constituents needs (Dalby, 1992). Indeed, as a full critical analysis of authors such as Kaplan, Goldstone and Connolly & Kennedy would bear, the object of security is indeed the Global North being made insecure by the specter of migration and conflict from the Global South. A most central critique to this literature is asking the question: "Security for Whom?" (Dalby, 1992; Hyndman, 2001). Who or what is being made insecure and what or who is doing the insecuring is a crucial question that guides my analysis of the Maldives case.

Feminist Geopolitics

While critical geopolitics and critical environmental security provides a useful and welcome departure from the neo-Malthusian literature of the mid 1990s, it falls short of providing a platform from which to launch an analysis of 'embodied' conceptions of migration, climate change and security (Hyndman, 2004; Haraway, 1991; Sparke, 2000). I take Hyndman's work seriously as I am attempting to 'embody' a previously useful but disembodied critical geopolitics. What Hyndman means by 'embody' is to place the abstract discussion of geopolitics, which only occurs in academic debates and high politics, and ground it in tangible case studies, exploring the human impact and in my case the lived-everyday of climate change politics in a vulnerable state. Additionally, my research in the Maldives answers Hyndman's call to analyze the state as a product specifically of those bodies that run it. This means attending to practitioners of statecraft – through interviews, for example – rather than approaching the state abstractly through a textual analysis of relevant policy documents. Of course, policy documents are important; however, they obscure the messiness of statecraft or what feminist political geographers call the "lived" aspects of the state, i.e. the state as a chaotic amalgam of everyday practices (Hyndman, 2004). As such, I am not interested in vague conceptions of the state or "its" security. Rather, I attempt to answer the question: "How, then, can dominant scripts of geopolitics be both displaced and re-situated in order to foreground the security of people on the ground, those subjects effaced by realist geopolitics and international relations?" (Hyndman, 2004, pp. 311). In other words, I am interested in the practice of climate change politics specifically as it relates to a small island state operating on the classic geopolitical periphery. I aim to employ this feminist geopolitics to excavate the

paths and discourses that key decision makers in the Maldivian state have harnessed to achieve one of their stated political goals: "To maneuver the Maldives as a central player on climate change globally" (SAP, Maldives Policy Doc, 2008, pp. 392).

Science for Whom?

While one of the central questions asked by feminist geopolitics of dominant geopolitical discourses is "Security for whom?" (Hyndman, 2001). I seek to apply this questioning of discourse briefly to the scientific basis of climate change. Who or what is being served from the science, specifically those summaries from the IPCC? While I am not rejecting empiricism, I endeavor to uncover the manners in which the IPCC, a document claiming global salience and relevance, offers predictions regarding global sea level when the phenomenon itself is quite spatially heterogeneous. Furthermore, the IPCC report is involved in a process by which local knowledge is disembodied and then synthesized and generalized and politicized for a global audience. Indeed, the most influential portion of the IPCC document, the executive summary for policy makers, is line item approved by politicians, not scientists (Agrawala, 1998). To properly understand the climate change discourse, one must think critically about the interaction of power and knowledge (Pettenger, 2007).

Additionally, I will execute a review of the scientific literature which states that while sea level is projected to rise globally, that *rise will not be the same in all places at all times*. Furthermore, new literature reveals a counter-intuitive process by which coral atolls may actually grow with the rising sea thus not endangering them as much of the geopolitical rhetoric would have us believe (Woodroffe, 2007 et. Al.). Indeed, it is

predicted from past data that coral atolls in particular are expected to survive even given predicted sea level rise due to the atolls natural adaptive capacity (Kench, McLean & Nichol, 2005). This information provides a unique frame of analysis for climate vulnerable states position in the geopolitical imagination as victims, potential migrants or refugees, topics I investigate in interviews and other literature.

Of course, coral atolls consisting of sand can only grow by more sand deposition from a rising sea level. Within the case of areas that are concretized (literally covered in concrete), such as the entire capital city of Male', the international airport and other islands with harbors, this natural adaptive capacity is no longer available. Even with natural adaptive capacity, the Maldives faces an existential threat.

Environmental Justice

The concept of environmental security and the question posed it by feminist geopolitics arrive at an interesting nexus in the literature of environmental justice. As stated by AOSIS (Alliance of Small Island States) in 2009: "We are gravely concerned that climate change poses the most serious threat to our survival," (AOSIS Declaration on Climate Change, 2009). As aforementioned, the issue of climate change as a security and human rights issue have been taken up by the UN. This is crucial as both practotioners of statecraft as well as academics have taken up this theory.

In the debate over climate change, the center of disagreement has moved from the scientific basis to assignment of responsibility and projected suffering of its ill effects. Within this debate, there are many disparate arguments and factions, which have led to a

'gridlock' in the arena of international negotiations (Roberts, 2001). Such gridlock should not come as a surprise; indeed no other issue demonstrates the 'messiness' of global governance like climate change (Liliana et al, 2009). This gridlock is in part due to the difficulty in assigning historical responsibility for emissions (Muller, Hohne and Ellermann, 2007). Also, the costs of mitigating current emissions are perceived as too high by many industrialized nations (Adger, 2001). Many efforts have been made to academically unlock the problem of liability for climate change as well as judicially, recently evidenced by a decision by a California court to throw out a case by Alaskan Intuits attempting to sue a group of energy companies for the loss of their homes[1]. When discussing liability for climate change, the 'polluter-pays principle' almost always is the cited precedent for the current problem; however, the debate over CO2 as an environmental pollutant is ongoing even in the US Supreme Court[2] (Schwarze, 2007; Allen, 2003).

Despite this debate, still swirling amid post-Copenhagen fallout, what has been adamantly argued by the SIDS is: "While SIDS are among those that contribute least to global climate change and sea level rise, they are among those that would suffer most from the adverse effects of such phenomena and could in some cases become uninhabitable" (Barbados Declaration, 1994). Conversely, many industrialized countries are not willing to commit to current and future emissions cuts, as this would create obvious free-riding incentives for developing countries. These disparate viewpoints make global climate change the consummate long-term policy issue (Hovi et al, 2009).

[1] See case details from the US District Court, Northern District of California, and San Francisco Division. *Native Village of Kivalina and City of Kivalina v. ExxonMobil Corp. etc*…This case has since been thrown out of court but others are awaiting trial.
[2] See Massachusetts v EPA, 2007.

This dual of risk and responsibility that is risk in the Global South and responsibility in the Global North is central to the climate debate today. Shortly after the Kyoto round of negotiations, Gillespie commented on SIDS (Small Island Developing States) ability to make an impact on international climate negotiations:

> Currently, the SIDs' influence appears to be one of being entrapped within the financial mechanisms of the regime which are closer to adaptation. In other words, the battle is already lost and the best approach for SIDs is to prepare for the inevitable rather than taking the lead at forcing mitigation. This retreat is regrettable as the climate future is open for capture (Gillespie 2003, 67).

Cornelius summarizes aptly both Adger's book on the subject as well as the state of the political argument: "…four main issues: who should take responsibility for climate change, how much assistance should be given, how assistance should be distributed, and how adaptation decisions should be made at all levels" (Cornelius, 2009 on Adger et. al., 2006). These four issues will mold whatever distributive rules and mechanisms arise from an effective environmental treaty will be shaped much more by political power than any ideal efficiency or effectiveness standards (Krasner, 1991). This political power is generally concentrated with those countries for which the cost of international agreements is high leaving countries like SIDS with precious little bargaining power (Thompson, 2006).

The negotiating positions of rich nations in the Global North and poor nations in the Global South are determined largely by the 'triple inequality' of responsibility, vulnerability and mitigation (Roberts and Parks, 2007). The classic position of the G77 and other vulnerable and poor nations has been one of vulnerability and non-responsibility in international climate negotiations. Scholars have argued for some time now that if the climate change discourse is to be altered, it must be by developing nations

taking the lead in emissions reductions (Najam, 2003). The Maldives presents an interesting case in that they have recently split from the G77 over this issue precisely. Climate change is a deeply political issue the solution for which must be found by a fundamentally political process (Paterson, 2003). Small Island, climate vulnerable states have taken it up and made it *the* political issue for them on the stage of global geopolitics. There is a need now more than ever to understand how the balance of political power shifts in reaction to climate change. The implications of this are huge for international negotiations as they are a constant power struggle and a prime stage for the shifting global geopolitical imagination to be acted out. How small states with little "hard" power are able to appear large in global geopolitics is an anomaly I will explore.

While the governments of the world seek an agreement on what to do about climate change, some of the details, and how they are arrived at, are still under debate. Indeed, how the scientific particulars of the IPCC report are arrived at is an intensely political process, one crucially important to nations' geopolitical standing (Agrawala, 1998). This is often lost when the debate moves from the realm of natural to social science, from the underlying physical and chemical changes in our atmosphere to the social costs and political instability brought about by those changes. I seek to bridge this gap in the literature by coupling a review of relevant natural science literature with primary research on the everyday operation of a nation state imperiled by climate change. The relevant natural science literature includes the most recent IPCC report, various articles regarding global eustatic sea level change, reef and atoll geomorphology.

It is crucially important to understand where the science stands on the issue of climate change, specifically sea level rise, as this is the issue on which the Maldives have

staked their claim to the world. Through an examination of the literature, any dissonance between the state of the science and the rhetoric of the Maldives will be exposed. Understanding how the state performs science and how science is produced by the state will aid us in unpacking the geopolitical imagination wrapped up in the topic of environmental security.

Sea Level Change

Global mean sea level is nearly a contradiction in terms. Since the level of the sea is constantly varying over time and space, it is an extraordinary task to measure the 'mean' sea level from which to measure changes in that 'mean'. Until the early 1990s, mean or eustatic sea level was measured by a series of tide gauges around the world. Since 1992 when the TOPEX/Poseidon satellite mission was launched, the most accurate sea level change data comes from high-precision satellite altimetry data. The level of precision required was reached by a combination of refinements in data processing and instrumentation allowing researchers to make firm conclusions from the satellite data (Cazenave & Llovel, 2010). However, understanding sea level change on a global scale is not as simple as measuring the volume of water in a bathtub and changes over time:

> Sea level is a very sensitive index of climate change and variability and, in fact, responds to change in several components of the climate system. For example, as oceans respond to global warming, seawaters warm and expand, and thus sea level rises. Coupled atmosphere-ocean perturbations, like El Nino–Southern Oscillation, affect sea level in a rather complex manner. As mountain glaciers melt because of increasing air temperature, sea level rises because of freshwater mass input to the oceans. Modification of the land hydrological cycle due to climate variability and anthropogenic forcing leads accordingly to increased or decreased runoff, and ultimately to sea level change. Change in the mass balance of the ice sheets also has a direct effect on sea level. Even the solid Earth affects sea level through ongoing processes of glacial isostatic adjustment (GIA) due to the deglaciation event of the last Quaternary ice age. (Cazenave & Llovel, 2010, pp. 146)

The most authoritative and influential document in the literature on global climate change is the regular IPCC report. The most recent report published in 2007 states explicitly that global mean sea level has been rising and the *rate* of sea level rise has been rising between the 19th and 20th centuries (IPCC, 2007). This finding is correlated explicitly with rising global temperatures and decreased Northern Hemispheric snow cover in the Summary for Policymakers (IPCC, 2007). It is also correlated with global average surface temperature {see figure 1}.

Sea level has historically varied with the formation and decay of major ice sheets, sometimes as much as 120 meters from current levels (Church et. al., 2008). Obviously, the formation and decay of major ice sheets is largely but not solely dependent on global average temperatures. Predictions for future sea level rise must rely on paleoclimatic data, which indicates that during the last interglacial period, global mean sea level was approximately 6 meters higher than present levels (Overpeck et al., 2006). It is estimated that the temperature during the last interglacial period was 2-5°C warmer than at present (IPCC, 2007). The main contributor to sea level rise during this time period was most likely meltwater from Greenland and Antarctica (IPCC, 2007).

This is precisely why the present warming of the climate system is so worrisome to countries like the Maldives. A rise in global average temperature will trigger a rise in global average sea level. The question then becomes how much warming will cause how much rise in sea level and where.

According to the IPCC's AR4 report, sea level rose at a rate of 1.8±0.5 mm/yr for the time period of 1961 – 1993. During the period from 1993 – 2003, the rate of sea level rise *increased* to 3.1±0.7 mm/yr (IPCC, 2007). After these findings, the IPCC predicted

a rise in sea level over the next century 18 – 59 cm depending upon the climate change scenario used (IPCC, 2007). These estimates do not take into consideration the potential and irreversible destabilization and breakdown of the world's two largest ice sheets, Greenland and the West Antarctic Ice Sheet (IPCC, 2007). Because of this among other reasons, many scholars have criticized the IPCC report as forwarding too conservative a conclusion on the issue of sea level rise (Dasgupta, 2009). While this may indeed be the case, the very nature of the IPCC is conservative particularly in its summary reports considering they often "resemble a fox-trot performed by a drunken couple" requiring a line by line consensus on all included language (Agrawala, 1998).

The current sea level rise witnessed in the past half century has two main contributing factors: thermal expansion of oceans and melt water runoff from land based ice including glaciers and ice sheets (Church et al. 2008; Cazenave & Llovel, 2010). Thermal expansion is the main cause sea level rise over the past 50 years (IPCC, 2007). These two causes will be the main contributing factors in the future as well {see figure 2}. Figure 2 shows the various inputs into the sea level rise equation during two periods. The period from 1961-2003 was commonly used as standard sea level data; however, since the advent of satellite altimetry, starting in 1993, error margins have decreased and all inputs have increased with the observed total sea level rise nearly doubling as a result of more precise measurement.

Thermal expansion is a physical process by which the volume of water expands as the temperature rises. Consequently, as the global average temperature rises, it is to be expected that the Earth's aggregate water volume will increase. The problem of thermal expansion is not this simple, however, because warm water increases in volume more

than cold water; additionally, water under higher pressure (at depth) expands more than that at low pressure (IPCC, 2007). Because of these complicating factors, no simple correlation between global surface temperature and thermal expansion exists. A useful analogy for thermal expansion of the earth's oceans on a small scale is something in all of our homes. Today, because of recent EPA regulations, all new water heaters must be installed with an expansion tank. The expansion tank allows the water heater to exhaust the excess volume of water into it rather than pushing water back through the pipes and into the main. This same process is occurring but on a truly massive scale.

The other main contributor to sea level change is the discharge of water into the ocean. This can come from glaciers, ice sheets, reservoirs, lakes, rivers, permafrost and the atmosphere. Discharge from water storage in the atmosphere, reservoirs, lakes, rivers and permafrost is negligible when compared to the enormous impact land based ice discharge could have on global sea level.

Of course, understanding sea level rise is only part of the equation as variables such as glacial isostatic adjustment and more general solid earth deformation must also be taken into account. For our purposes, we will focus on the solid earth changes relevant to this research that is the area of coral atoll geomorphology particularly as it relates to sea level rise.

Coral Atoll Geomorphology

The Maldives are a string of approximately 1200 islands ranging in size from several square meters to several square miles grouped into 26 atoll provinces (CIA WFB, accessed July, 2010). These islands are 1.8 m above sea level on average and no point in

the Maldives is higher than 3 m above sea level (UNDP, Maldives). High population density, low adaptive capacity and high coastline to land area ratio all contribute to the Maldives being the most vulnerable of all small island states (Barnett & Adger, 2003).

The current operational assumption is that countries like the Maldives will be forced to move or take extreme adaptive measures to continue living on their low lying islands. The possibility of complete inundation and thus complete destruction of island infrastructure is quite the apocalyptic picture and indeed a possibility. Common knowledge would have the Maldives going under as the sea level rises; however, detailed study of the Maldives in particular and coral atoll geomorphology more generally reveals a contrary narrative. In fact, the coral atolls could well keep up with the highest rates of sea level rise due to sediment deposition, which occurs with a higher sea level. Indeed, the IPCC report states briefly that, "a few islands are morphologically resilient and are expected to persist" (IPCC WGII Executive Summary, 2007, pp.689). The Maldives is one of those *few* islands.

> Contrary to most established commentaries on the precarious nature of atoll islands, our data and model present an optimistic view for the Maldivian islands. They have existed for >5000 yr, are morphologically resilient rather than fragile systems, and are expected to persist under current scenarios of future climate change and sea-level rise. (Kench et al. 2005, pp. 148)

Indeed, the Maldives may be quite resilient to the shocks of sea level rise over the next century if the coral atolls' natural adaptive capacity can be retained. Furthermore it is believed that the natural ridges on the windward side of most islands will continue to grow as sand deposition continues (Woodroffe, 2007). This is believed to be another example of natural resiliency in coral atolls.

A study of 27 atoll islands showed a large percentage of islands actually *increased* in size despite rises in sea level and they produced no evidence of significant reduction in island size (Kench & Webb, 2010). If such a finding is accurately applied to the Maldives, which consists entirely of atoll reef-islands, it could have profound impacts for their geopolitical position. Of course, the natural adaptive capacity of these atoll islands is rendered useless when they become concretized. Interestingly enough, nearly half of the population of the Maldives live in the capital of Male' which is essentially one large concrete slab with absolutely zero natural adaptive capacity. Furthermore, Male' has been 100% reclaimed[3] and cannot expand any further. In situations like Male' or the airport island, Hulhumale, or nearly every other major island with coastline concretization projects (i.e. harbors, docks, sea walls, etc…), the natural adaptive capacity and resiliency of the islands is moot as well as the debate about atoll resiliency to predicted future sea level rise.

Sea Level Rise in the Maldives

Sea level change, while commonly conceptualized as a universal phenomenon, actually occurs in a spatially heterogenous manner. Since the early 1990s and the beginning of satellite altimetry, full global data exists for sea level changes. This data reveals a large degree of regional variability previously unknown to sea level science. Regional variability in sea level change is largely due to variations in thermal expansion, the largest contributing factor to recent sea level change (Cazenave & Llovel, 2010;

[3] The process of reclamation involves pumping sand from the ocean floor to the reef surrounding an island to expand the buildable, dry surface of the island. This is done to build the island up and out and in the case of Male', this has been done all the way to the edge of the coral reef rendering Male' 100% reclaimed.

Cabanes et al. 2001). Because of this spatial heterogeneity, in-situ studies are useful to provide detailed explanation of local factors contributing to sea level change.

While *in situ* tide gauge data from 3 sites in the Maldives reveals a trend similar to that found in the satellite altimetry data (Merrifield, personal communication), several scholars have offered 'new perspectives' on the issue. Nils-Axel Morner is one such author who published an article in 2003 in the Journal of Global and Planetary Change entitled "New Perspectives for the future of the Maldives" in which he makes several claims:

> In the region of the Maldives, a general fall of sea level occurred some 30 years ago. The origin of this sea level fall is likely to be an increased evaporation over the central Indian Ocean linked to an intensification of the NE-monsoon. Furthermore, there seems no longer to be any reasons to condemn the Maldives to become flooded in the near future. (Morner 2003, pp. 182).

If what Morner claims is accurate, it totally confounds the Maldives geopolitical position vis-à-vis the threat posed by climate change. Morner and his team performed research in the Maldives on general island morphology, gathered anecdotal evidence from fishermen about a shallow sailing route and describe the relative elevation of a skeleton with respect to sea level rise to build their case. Their conclusions are that sea level dropped by 30 cm sometime in the past 50 years and there is no reason to expect a future rise in sea level in the region of the Maldives (Morner et al, 2003).

Morner is heavily critiqued. In 2005, Philip Woodworth published an article that deconstructs and exposes Morner's argument. Woodworth systematically refutes all of Morner and his team's evidence for their claims. His critique is worth citing at length:

> The suggestions of such a fall (30 cm) has been examined from meteorological and oceanographic perspectives and found to be implausible…In particular, a suggestion that an increase in evaporation could have caused the fall has been demonstrated to be

incorrect. Without any real evidence for a hitherto-unrecognized process which could lead to a sea level change as significant as that proposed by the fieldwork team, one concludes that a rise in sea level of approximately half a meter during the 21st century, as suggested by the Intergovernmental Panel of Climate Change Third Assessment Report, remains the most reliable scenario to employ in future studies of the islands. (Woodworth, 2005, pp. 1).

Morner's conclusions are established on highly questionable data, some of which is merely sparse anecdotal evidence relating to changes in a boating channel. Furthermore, he seems to question his own findings in the last sentence of his article, "*Besides*, at about 1000-800 BP, the people of the Maldives survived a higher sea level by about 50-60 cm" (Morner et al., 2003, pp. 182). Ultimately, Morner's construction of a new future for the Maldives falls apart and warrants little credit or further exploration.

While Morner may have performed faulty research, have questionable funding ties to energy-related think tanks and publish highly critiqued articles, he does provide us with some interesting if misguided commentary on sea level rise in the Maldives.

If you go around the globe, you find no rise anywhere. But they need the rise, because if there is no rise, there is no death threat…. So we made a very nice program for Maldives television, but it was forbidden by the government! Because they thought that they would lose money. They accuse the West for putting out carbon dioxide, and therefore we have to pay for our damage and the flooding. So they wanted the flooding scenario to go on. (Morner, 2007, pp. 35).

While Morner is wrong about the state of sea level, he touches briefly, if accidentally on the subject of perception of danger. The Maldives has forwarded themselves as an at-risk state, a nation of people who potentially will have to move to dry land because of a rising sea. Indeed, with no sea level rise, there is no death threat. Without a flooding scenario, there is no underwater cabinet meeting. As aforementioned, atoll geomorphologic evidence reveals a surprising natural adaptive capacity in the

Maldives in response to sea level rise. Indeed, on islands where no concrete exists, where the dynamic and natural state of the island remains intact, one can expect those islands to rise with the sea. However, no island exists in this state when inhabited by man. All inhabited islands have been concretized, settlements permanantized and fishing docks and harbors built reducing the natural adaptive capacity of the islands. So while it may very well be that hundreds of islands grow up with the rising seas, it is of little more than academic importance to those living in the Maldives who's livelihoods will be threatened by sea level rise. As is clearly evident from a picture of Male', the dense capital of the Maldives, there exists zero natural resiliency on this island. If the island is going to adapt, it will be through human invention {see figure 3}

Death of a nation

The Maldives is a sovereign nation of approximately 300,000 people spread across a chain of nearly 1200 islands in the Indian Ocean (UN Maldives, 2010). The islands range in size from several square meters to several square kilometers, and in the aggregate comprise slightly less than 300 square kilometers (CIA WFB, 2010). They are clustered into 20 administrative atolls representing 26 natural atoll formations (Invest Maldives, 2010). Maldivian citizens inhabit 200 islands on a permanent basis, and nearly 100 additional islands house high-end resorts (Maldives DOI, 2010). Government policy dictates that there be only one resort per island; moreover, no tourist resorts are permitted on inhabited islands. The population distribution in the Maldives is mostly urban. For example, a full third of the Maldivian population lives in Male', which at approximately

2 square kilometers is one of the most densely populated places on earth at more than 50,000 persons per square kilometer (UN Maldives, 2010).

The highest point of elevation on the coral archipelago is approximately 3 meters above sea level (CIA WFB, 2010). However, the average elevation above sea level for the full chain of islands is only 1.6 meters above sea level, with many islands lower lying still (Invest Maldives, 2010). Alongside the fact that none of the islands are very large in terms of surface area, this means that all inhabitants live quite close, both in terms of distance and elevation, to a coastline. While this appeals to the some 600,000 tourists who arrive every year in the Maldives, it serves as a constant reminder for the Maldives' 300,000 inhabitants of their very near existential threat from sea level rise.

Tourism makes up the largest part of the Maldives GDP, with some estimates of both direct and indirect impacts putting it at nearly 70% of the nation's GDP (UN Maldives, 2010). The second largest component of the economy is fishing. Both these industries are environmentally intensive and can be environmentally damaging. Certainly, they both rely heavily on the natural environment of the Maldives for their existence. For example, the incredible diving sites located throughout the Maldives motivate most of the tourism in the Maldives. The Maldives has some of the most beautiful coral reefs in the world and they attract hundreds of thousands of visitors a year, accounting for the majority of the tourism sector. While the main prize for the fishing industry is tuna, a migratory open water fish, the bait used to catch these fish is gathered from the reefs in the form of grouper, red snapper and other reef fish. Coral reefs are directly and indirectly responsible for an enormous majority of the Maldives GDP and economic prosperity or lack thereof.

The Maldivian people have a fiercely independent spirit having settled in the islands as early as 2500 years ago (Invest Maldives, 2010). During this time, a language unique in both script and intonation formed in the Maldives called Dhivehi. It is only spoken in the Maldives. While the Maldives did become a Sultanate in the 12th century AD and remained one until 1968, it retained a large degree of self-governance and rule. In 1887, the Maldives became a British protectorate and existed as both protectorate and Sultanate until freedom from the United Kingdom in 1965 and the abolition of the Sultanate in 1968. This was accompanied by the arrival of a republic form of government.

The first decade of free rule was tumultuous. Power changed hands frequently until in 1978 with the election of President Maumoon Abdul Gayoom. Gayoom would run 6 more times unopposed for president in a system designed to retain him. The system existed as a pseudo-parliamentary one in which the parliament elects an individual to be approved by a majority public referendum vote (Ibrahim Rasheed, personal communication, 2010). Gayoom's rule prompted much growth as he opened the Maldives for development, particularly the tourist sector. However, accusations of human rights violations, exile of political opponents, and general lack of popular freedoms punctuated his rule. Gayoom's main opponent through his later terms was Mohamed Nasheed, a journalist who Gayoom exiled, imprisoned and had beaten several times.

In 2008, after public outcries over the need for election reform, Mohamed Nasheed was elected president in the nation's first democratic election in its history. Nasheed's platform focused on combating poverty and institutionalizing good governance. Ironically, environmental reform was not part of his election strategy; this

despite the fact that the Nasheed government is practically synonymous with climate change mitigation policies internationally. Nasheed's post-election attention to climate change – and the associated problem of sea-level rise – is in part a legacy of Gayoom's years in office. For example, Gayoom began speaking to the international community about sea level rise after Male' was nearly completely flooded during a storm in 1987. The associated problems of climate change and sea-level rise quickly became an urgent issue for Gayoom. In an urgent 1987 speech to the UN General Assembly later dubbed the "Death of a Nation" speech, Gayoom outlined the Maldives' environmental vulnerability due to its low elevation and proclaimed the Maldives as a global test site of sorts where the world could witness the ravages of environmental change-induced sea-level rise: "We in the Maldives have seen and lived through grim experiences which could be the indicators of the dire consequences of global environmental change provoked and aggravated by man" (Gayoom, 1987). In a subsequent 1990 address to the UN General Assembly, which for the first time positioned the Maldives as a world leader on the topic of climate change and sea level rise, Gayoom noted that "the very survival of my island nation" was at stake. A larger excerpt from his speech is worth citing at length:

> We are trying to do what we can to combat this potential threat [global warming and sea-level rise]. At the Commonwealth Heads of Government Meeting held in Kuala Lumpur in October 1989, the Maldives proposed that the Commonwealth make every effort possible to expedite the drafting of the framework convention on environment on which WMO and UNEP have been collaborating for some time. The initial report of the Inter-Governmental Panel on Climate Change will be considered at the Second World Climate Conference to be held in Geneva from 29th of October to 7th of November this year, and it is hoped that the final convention be adopted at the United Nations Conference on Environment and Development in 1992.
>
> A Small States Conference on Sea-Level Rise was hosted by the Maldives last year, and the Male' Declaration on Global Warming and Sea-Level Rise, which was adopted at the Conference, underscored the urgency of the problem and identified many areas of

possible international cooperation in this field. As called for in the Male' Declaration, an Action Group has been established to coordinate a joint approach on the issues of climate change, global warming and sea-level rise, and to pursue and follow up on global and regional response strategies. The Group comprising representatives from the Mediterranean, the Caribbean, the South Pacific and the Indian Ocean regions, is scheduled to meet in Male' early next year.

There is however, a limit to what the small low-lying states can do. We need international help. In this multi-polar world where interdependency has become key element, we believe that it is not just the responsibility of the nations threatened by sea-level rise to take preventive measures. We remain convinced that it is also the duty of those states, whose race for development over many years had contributed to global warming, ozone depletion, acid rain and tropical deforestation, to reverse the existing situation. We cannot accept that economic development has to be achieved at the expense of our environment.

The Maldives calls upon the industrialized nations to take urgent measures to reduce the emission of greenhouse gases into the atmosphere and to adopt environmentally compatible technology. We urge them to assist the developing countries to implement similar measures. It is our earnest hope that the world community heed our voice - that of low-lying states - and save us from the ignominy of becoming environmental refugees. (Gayoom, 1990, Speech to UN General Assembly).

Gayoom would go onto speak at a number of other venues in the wake of the 1987 floods, and in so doing bring attention to the threat that global warming and sea level rise posed to his country and other low-level island nations. Indeed, Gayoom was recognized by former UN Secretary General Kofi Annan for his leadership on the issue of climate change (Maldives Ministry of Foreign Affairs, 2008).

Much of the current rhetoric surrounding climate change negotiations is encapsulated in above four paragraphs, written 20 years ago. Indeed, Gayoom's speech can be read as a template for the Maldives' subsequent dealings with the international community on the topic of climate change and sea-level rise. In a nutshell: climate change is a survival issue for many people and those people are working quickly to remedy the problem in the arena of international relations; however, small states can only do so much and they are forced to call on large, wealthy states for help. Ultimately,

Nasheed would make exactly the same argument. Nasheed would even repeat Gayoom's claim that sea-level rise could conceivably make environmental refugees out of Maldivian residents. Indeed, Nasheed is perhaps most well-known internationally for his insistence that the Maldives be allowed to purchase territory to serve as a new homeland in the event that the island chain is submerged (Ramesh, Nov, 2008).

The 1987 flooding that provoked Gayoom's speech before the UN – which itself came to define the Maldivian position on climate change and sea-level rise – ironically had nothing at all to do with climate change. It was driven by tidal surges. This is part of a much more general phenomenon that I unearthed during my fieldwork. Indeed, in part what my research on the Maldives and the problem of sea-level rise discloses is a cognitive slippage between a realm of sea-*related* disasters broadly speaking and climate change induced sea level rise. For example, during my research trip, I asked a number of key government officials and policymakers about the major events, which put sea level rise on the map for the Maldives. Apart from Nasheed's election in 2008, most of my interviewees noted the importance of the 1987 storm surge as well as the earthquake-driven 2005 tsunami as catalysts. For example, Dr. Simad Saed, a member of President Nasheed's advisory council on climate change in the Maldives, spoke to me about the changes that occurred after the flooding of Male' in 1987:

> Yes I think, with the flooding events of Male', it created real policy interest in the government, in all the departments of the government as to what might be the impacts and consequences. President Gayoom did play an important role…in advocacy work, which led to the establishment of the commonwealth group. An expert report was prepared (by the commonwealth group) and immediately there was a commonwealth meeting, a small island state meeting held in the Maldives on sea level rise which led to the establishment of the Alliance of Small Island States (AOSIS) which still negotiates in climate conferences (Interview with author, May, 2010).

The impact of the flooding events in 1987 should not be understated, as it was a catalyst for the formation of AOSIS which now negotiates on behalf its members. AOSIS has become a powerful geopolitical entity, whose formation largely relied on the fabrication of a sea level rise discourse reacting to a flooding phenomenon due to tidal surges and not climate change. This was not a purposeful misleading but rather used as symbolic of what the future may hold, a harbinger of the future fate of the Maldives. Even high-ranking officials of the Maldivian government when asked about the impact of non-climate change natural disasters on the climate change discourse do not make this distinction clear.

Interviewer: …with former President Gayoom, he did some awareness raising about climate change issues, mostly motivated though by issues that actually aren't related to climate change like flooding events and the tsunami and things like that.

Interviewee: I think the Maldives has really positioned as you said before the center focal point and the vocal, the main vocal voice in climate change and adaptation and mitigation. A major change is we've actually decided to move out of this victim introvert in that situation to go out and say look, you can't do this to us. So we've said it to China, we said it to the Americans; we've said it to the Europeans as well. Look, you can't keep doing this, and I think people are listening more than they had been before (Interview with author, April, 2010).

What is left unsaid in this portion of the interview is what exactly the Maldives would like China, America and Europe to stop doing. The jump is made from raising awareness to geopolitical "position". Raising awareness is never innocent. It never occurs in a black box. Awareness raising is a geopolitical power play which allows a small island state on the periphery of the global economy to become central to the climate change debate. The same

interview subject, a high-ranking official in the Maldives government said this on the Maldives geopolitical positioning, "I can guarantee that there won't be any negotiation on climate change that will go without Maldives being included in it, and that's been happening since President Nasheed has been elected" (Interview with author, April 2010).

The point that these officials forward is that climate change is more than just a politics of representation for them, it is being put into practice and has real, substantive impacts on the ground. The tsunami in 2004 was another case of a non-climate change induced disaster catalyzing the discursive environment to the Maldives favor. For example, the President has mentioned the possibility of buying land elsewhere to move to when the Maldives are washed away. This language is always closely linked with the topic of environmental refugees which one interviewee cites explicitly in conjunction with the 2004 tsunami.

> I think it was very obvious to us during the tsunami, how vulnerable we are and how it is a security issue actually. Because worse comes to worse, another tsunami hits, and if anything that happened to Sri Lanka happened to Maldives, I don't think we would be sitting here today and we will have to leave. We ill have to seek shelter. We will have to go and mingle with other cultures…this is serious because it's happening and we're going to be environmental refugees, so even right now we're experiencing, after the tsunami for example, that was a worst-case scenario and we are seeing during the monsoon season more and more islands are getting flooded (Interview with author, April, 2010).

The Sumatran tsunami of 2004 has reverberating impacts much as the tidal-surge flooding of 1987 has for the Maldives. These cases have been demonstrative of the potential consequences of global climate change in the Maldives; however, they are cited again and again in the international discourse about climate change. For example, in Copenhagen last winter, the Maldives was

featured in a photograph exhibit entitled "Climate Vulnerable". The pictures in the exhibit were meant to display how vulnerable countries like the Maldives is to global climate change. Indeed, "It depicts a nation under threat, as it tries to safeguard an age-old culture and lifestyle that could be erased with rising seas and climate change." (Bluepeacemaldives.com, About *Vulnerable*). The most striking images in the set are off the ocean swelling over breakwaters; ironically, these pictures were taken during the tsunami of 2004 {see figure 4}. This reiterates the points reflected in the interviews: this debate has largely been argued in discursive postures, the foundation for which is not rooted in climate change at all, but one time natural disaster events. Geopolitical power is shifted by this discourse and substantive changes in the lives of local people are altered by the framing of these events as climate change related.

The Maldives formed an alliance based on a perceived vulnerability awareness for which was catalyzed by a flooding event having nothing to do with the climate change from which they would be vulnerable. Established shortly after President Gayoom's "Death of a Nation" speech to the UN General Assembly, AOSIS serves to increase small island state solidarity and coalescence behind the issues that make them similar, such as their vulnerability to climate change. The formation of AOSIS is in part due to the tidal surges of 1987, which motivated coalescence into a negotiating position.

> The Alliance of Small Island States (AOSIS) is a coalition of Small Island and low-lying coastal countries that share similar development challenges and concerns about the environment, especially their vulnerability to the adverse effects of global climate change. It functions primarily as an ad hoc lobby and negotiating voice for Small Island developing States (SIDS) within the United Nations system. (AOSIS, *About*, 2009).

Groups like AOSIS give geopolitical power to SIDS (Small Island Developing

States) as they coalesce in the geopolitical imagination around a particular issue or cause. While viewing a classic world map, countries like the Maldives, Tuvalu and Vanuatu may be difficult if not impossible to spot, often this is the case with geopolitical power relations as well. However, while little land area can be claimed, SIDS in AOSIS still account for 20% of UN general membership (AOSIS, 2009).

AOSIS remains a powerful voting block in the UN and held special geopolitical power during the meetings at Copenhagen. The Maldives has been the face of AOSIS ever since it's creation and as AOSIS gains power, so does the Maldives. The two main strictures AOSIS wanted included in any legally binding agreement coming out of the Copenhagen round of meetings in December 2009 were:

1) Long-term stabilization of atmospheric greenhouse gas concentrations at well below 350ppm CO2-equivalent levels *and*

2) Global average surface temperature increases to be limited to well below 1.5° C above pre-industrial levels (AOSIS Declaration on Climate Change, 2009, Accessed from sidsnet.org on June 10, 2010).

The Maldives has always been a key player in AOSIS, particularly in formulating the collective bargaining position of the group. When asked about the bargaining position of the Maldives, only four months removed from the climate meetings in Copenhagen, one senior official said: "In no other time have the Maldives been listened to so well. So we were pushing for 350 (ppm) and 1.5 (degrees Celsius)" (Interview with author, April, 2010). Interestingly enough, at least from the perspective of this government official, "The Europeans are willing to go for it (350 & 1.5) as long as it's

mentioned in the IPCC Report" (Interview with Author, April, 2010). As it currently, stands, the only number to make it into the non-legally binding Copenhagen accord is 2: two degrees of warming.

> To achieve the ultimate objective of the Convention, to stabilize greenhouse gas concentration in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, we shall, recognizing the scientific view that the increase in global temperature should be below 2 degrees Celsius, on the basis of equity and in the context of sustainable development, enhance our long-term cooperative action to combat climate change. (UNFCCC, 2009, text of Copenhagen Accord)

Punching above our weight

It seems intuitive that in international negotiations like the UNFCCC meetings in Copenhagen last winter that large countries, that is to say, nations with large economies and large populations wield the most power. Indeed, countries with the largest economies have the most to lose by signing legally binding emissions reduction agreements, as they are the most heavily reliant on fossil fuels for energy that powers every economy. Countries like the Maldives are extraordinarily peripheral in the global geopolitical imagination, yet they have shoved their way onto the stage, particularly in reference to climate change. As several Maldivian officials told me, "We are punching above our weight." The main point is that the Maldives, through extremely small in terms of military power, economic power and classic geopolitical power has proven massive in the climate negotiations and the whole realm of climate geopolitics. As summarized by International Media Advisor to the Maldives, Paul Roberts:

> I was speaking to a lot of people and asking them for their assessment on sort of how the Maldives did at Copenhagen and my contacts in the foreign policy world. And they were saying that after America, China, India, EU, the next big country you'll be talking about in terms of influences Copenhagen or who had a big presence there was the Maldives. So again, with over 150 countries and the Maldives representing a population, which is a small town in the West. I think that's significantly punching above your weight (Interview with author, May, 2010).

Roberts makes an excellent point here. It is clear that power is distributed most often times by the wealth of nations as well as by population of nations. It appears at these international environmental conferences, those least willing to go along with legally binding agreements, that is to say, the "slowest ship", wield power. The slowest ships are the states with the most to lose i.e. largest carbon economies. But the Maldives is punching above its weight by wielding a disproportionately high amount of power on the geopolitical stage. Another official in the President's office shared their thoughts on the subject:

> We are a very insignificant country, or we should be theoretically because we're so small, it's purely down to size. Size and wealth as well. And in order to really grab people's attention, make them get our point…climate change of course, poses us with an existential central challenge in that if there isn't a global solution then we go down. So we have to do everything in our power to make sure that a global solution is found (Interview with author, April, 2010).

The context of the above quote was the effectiveness and impact of the underwater cabinet meeting held by the Maldives highlighting their potential vulnerability to sea level rise. This cabinet meeting was arranged in conjunction with the 350.org movement. According to sources in the Maldivian government, Bill McKibben, founder of 350.org approached President Mohamed Nasheed with the idea and the President ordered his cabinet members to become SCUBA certified for their hugely popular dive. The news of the underwater cabinet meeting was published in hundreds of news outlets and, quite literally put the Maldives on the map in the geopolitics of climate change. When asked about how the Maldives were punching above their weight, the Minister of Housing, Transport and Environment, Mohamed Aslam, had this to say:

On the issue of climate change, I don't think there is anybody who is more appropriate to be at the very forefront of the negotiations than the Maldives. The Maldives is naturally positioned for that. We're not playing international politics on nuclear arms, we're not talking about border controls, we're not talking about immigration. We are talking about a real situation that we're faced with and everybody has a very good understanding that the Maldives and states like us around the world are the frontline states in this. So quite rightly, people do listen to us and I think it would be naïve for us not to realize that we have a morality and then we can play a major role in this. Our country's importance on a particular issue does not depend on its wealth; it depends on the importance of that country in relation to that particular issue…it is simply talking about climate change and we're talking about saving ourselves and also trying to lead the world on a path that we think would be eventually lead to the saving ourselves also trying to lead the world on a path that we think would be eventually lead to the saving of human kind (Interview with author, April, 2010).

For the Maldives, the reason that they are a key player on climate change is because in the debate on climate change, they, not major industrialized countries, have the most to lose. Climate change poses a real existential threat to the Maldives as a sovereign nation, something only territorial war has produced in the past. The Maldives has accomplished a remarkable position given their population, economy and general political clout. They are indeed, 'punching above their weight' in the traditional geopolitical sense. Other nations in similarly vulnerable environmental situations do not have the same authority that the Maldives do on this issue.

Take, for example, Bangladesh: severely threatened by the specter of sea level rise resulting in the displacement of millions of people, the loss of enormous swaths of arable land and the prospect of fresh water shortages because of a lack of glacial supply (IPCC, 2007). Climate change poses an existential threat to many Bangladeshi people, of which there are many. In fact, Bangladesh is 533 larger than the Maldives in terms of population. At Copenhagen, they barely showed up on the map.

What makes the difference then on the world stage? I have hopefully demonstrated that the Maldives certainly has some kind of geopolitical power on the

issue of climate change and disproportionately so if understood through traditional power metrics. This evidence contradicts many theories of power and deserves investigation. The Maldives is punching above their weight and we will analyze how.

First of all, the Maldives has a history with climate change, specifically with sea level rise, dating back to the late 1980's and former president Maumoon Gayoom. Since that time, the Maldives has been associated with climate change on the international stage and only increasingly since the election of President Nasheed in 2008. Since 2008, three major events have pushed the Maldives to the front of the climate change scene. Firstly, in November of 2008, newly elected President Nasheed told reporters of his intention to save up money to buy land for his country should they require relocation. Secondly, on March 15, 2009 President Nasheed announced his intention to turn the Maldives into the first carbon neutral nation. Thirdly, on October 17, 2009 President Nasheed and his entire cabinet met to sign the 350.org accord underwater to highlight the nations vulnerability to sea level rise. All of these gained considerable media attention leading up to the climate conference in Copenhagen. In Copenhagen was an exhibit focusing on the vulnerability of the Maldives to climate change. No event evidences the Maldives freshly gained political clout than their inclusion in the "secret summit", the meeting during the last hours of the conference with only 25 heads of state. It was at this meeting that the draft of the Copenhagen Accord was produced. The Maldives was among elite company at this meeting.

The Maldives has gained considerable notoriety as well as geopolitical power by leveraging the issue of climate change. The Maldives has done an extraordinary job of 'selling' itself as not only a climate vulnerable state but also a state that wants to be

proactive in solving the global climate crisis. Because of this, other nations have taken notice and the Maldives is using this to try and tilt climate negotiations in their favor. While monetary motivations certainly do exist, the Maldives is in a unique position to call for cuts in global carbon emissions because for people who live there, not doing so means they will not be living in the Maldives by the end of the century barring major adaptation projects. The Maldives has remapped the dominant scripts in geopolitics by highlighting their vulnerability effectively in international media, unlike other climate vulnerable states of the global South.

Moral Authority

One of the more important findings from my research concerns the problem of who is responsible for climate change and how Small Island Development States (SIDS) negotiate this responsibility on the international stage. Academic climate change literature, for example, makes the point that those who suffer the most from climate change-related environmental disaster are typically developing countries that are not significant contributors to climate change in the first place (Barnett, 2007 and S. Kasa et al, 2007). In an academic setting, where questions of justice and responsibility can be addressed in a political economic and legal vacuum, this literature makes the commonsensical point that those responsible for climate change should be held both legally and economically responsible for helping those communities most impacted by climate change. However, in practice the notion of responsibility for climate change is far stickier. Indeed, negotiations between those groups disproportionately responsible for climate change and others who disproportionately bear the brunt of climate change-

induced environmental disaster are in general at an impasse. On the one hand this follows from developed countries' unwillingness to legally as well as economically take responsibility for climate change – the costs would certainly be significant. On the other hand, it is difficult (if not impossible) to scientifically assign historical responsibility for climate change. As a result, there is a 'gridlock' in international climate change negotiations over who is responsible and what is to be done about it (Roberts, 2001; Muller et al, 2007).

For countries like the Maldives, gridlock in international negotiations over responsibility for climate change is unlike in other contexts. At stake is literally the country's territory. As noted by the President of the Maldives, "We can do nothing to stop climate change on our own and so we have to buy land elsewhere. It's an insurance policy for the worst possible outcome. We do not want to leave the Maldives, but we also do not want to be climate refugees living in tents for decades" (Ramesh, 2008, Accessed January, 2010). Indeed, if the IPCC's most recent sea level rise projections are accurate, some concretized portions of the Maldives could be underwater within the next 100 years. This is why the Maldives has targeted climate change as their most important issue at the international scale: climate change poses a very real existential threat to the survival of the Maldives as a nation-state.

In light of this urgency, my research shows how the Maldives is trying to negotiate the impasse noted above. In particular, my research shows that the Maldives' strategy has shifted from one of alignment with the G77's so-called "ecological debt" tactics to a quite different approach that I call "moral authority". This is an important shift because it signals the limitations (and perhaps breakdown) of the G77 when it comes

to negotiating with the global north over climate change issues – no doubt one of the most important north-south issues on the global table. But the Maldives' shift to a politics of "moral authority" is about more than the breakdown of perhaps the world's most important venue for north-south dialogue. Indeed, the Maldives' experiment in "moral authority" suggests a way around the general gridlock on climate change issues, noted above. Of course, whether or not the Maldives' strategy will be successful, as well as whether or not it will be more widely adopted remains an open question. Nonetheless, it is a significant tactical response to the climate change gridlock in that it changes the terrain on which those communities most susceptible to climate change-induced environmental disaster engage with the global North.

The Group of 77 was originally created as nations coalesced around the non-aligned movement during the 1960's and was intended to vocalize a common position for the Global South (S. Kasa et al, 2007). The aim of the G77 is "to articulate and promote their collective economic interests and enhance their joint negotiating capacity on all major international economic issues within the United Nations system, and promote South-South cooperation for development" (G77, 2010). While the stated aim and historical role of the G77 has been to aggregate the stances of its members into effective negotiating positions, often times the heterogeneity incumbent to the G77 means that certain stances may be mutually exclusive and even antagonistic (S. Kasa et al, 2007; Williams, 1997). For example, represented by G77 are AOSIS (Alliance of Small Island States) as well as the OPEC countries (Oil and Petroleum Exporting Countries). Clearly, these two assemblages seek quite disparate ends when negotiating internationally, especially as it pertains to climate change and reduction of green house gases.

Unfortunately for AOSIS, the chair of the G77 has come from an OPEC nation the overwhelming majority of the time and OPEC wields considerably more power over the general direction of the group (Barnett, 2007; Yamin & Depledge, 2004; Barnett et al, 2004). Figure 5 describes the various economic contexts of the various G77 nations {see figure 5}.

Additionally, the G77 still includes China and India in their numbers. This is a sore spot in all international negotiations as both nations essentially hide under the blanket of the G77 when it suits their purposes but pursue independent bilateral agreements without the approval of the G77 when it suits their goals (S. Kasa et al, 2007). As we have shown, the goals of China, India and the larger industrialized nations in the G77 may be in direct competition with those of vulnerable states such as AOSIS, of which the Maldives are a member.

The common position of SIDS is that of ecological debt: they have done the least to cause the problem of global climate change and yet are well positioned to suffer the first and worst consequences from it. In some cases, these states may no longer be inhabited by their citizens because of the ecological damage suffered because of climate change (Report of the Global Conference on Sustainable Development of Small Island Developing States, 1994).

Similar discourses have dominated the UNFCCC process effectively halving the world into two increasingly polarized groups: those who benefited from the burning of fossil fuels, and those who will suffer from the subsequent climate change. But even in the G77, a group meant to aggregate the viewpoint of the nations of the global South, there are increasingly disparate viewpoints on the issue of climate change. Some have

even suggested that in this power struggle, SIDS (Small Island Developing States) have already lost and must now prepare themselves for impending climate change adaptation rather than attempting to lead the world on the path of emissions mitigation (Gillespie, 2003). As my research shows, the Maldives is pursuing an altogether different plan of action, one requiring a divorce from the position of China, India, OPEC and the G77.

What the Maldives has organized is in large part a campaign to draw attention to their existential fight against climate change. However, the Maldives has differentiated themselves significantly from other SIDs and the G77 for reasons alluded to in one interview with a member of the President's Advisory Council on climate change, a group that advises the President on international treaties.

> We are no longer going to say yes to any solution or accord or treaty or whatever just because we belong to a group. We're not going to do that, that's why we broke away from G77 position and during Copenhagen because until last year, we have been saying yes we are going to go along with you, but no you don't actually support our cause here. You are not helping us (Interview with author, April, 2010).

In divorcing themselves from the G77 negotiating position the Maldives has ushered in a potentially cataclysmic sacrifice in geopolitical positioning, as historically the G77 has been a relatively powerful voting bloc and an avenue for small countries to table their issues with the international community. However, the position of the G77 has been largely ineffective in generating any legally binding commitments from industrialized countries on emission reduction targets. Because the G77 has adopted a position of demanding emission cuts from the industrialized world, but refuses to make any commitments to cut their own emissions, there has been an impasse at the recent rounds of climate negotiations such that it has caused the last two summits to disintegrate. Few legally binding agreements have been established.

Enter Mark Lynas: author, correspondent for the Guardian newspaper and advisor to the President of the Maldives on climate change. Lynas was hired to advise on the Maldives plan to become carbon neutral. He is widely recognized as an expert, speaking about climate change and policy responses. The ideas Lynas presents are 1) curbing emissions need not all be negative and self-sacrificing, it can be beneficial to the curbing country and 2) carbon neutral targets can unlock the impasse found in climate change negotiations (marklynas.com, *About*, Accessed April, 2010).

His recent book, *Six Degrees* has been very popular with policy makers in the Maldives and his influence on the policy direction of the Maldives should not be underestimated. According to one member of the President's Office when I asked about Mr. Lynas's role and influence, "Well, you're right in that Mark Lynas's book *Six Degrees* had a big impact on policy makers here…then all of a sudden we find ourselves with the good fortune of being able to work with him" (Interview with author, April, 2010). Lynas' influence was corroborated in other interviews as well.

The carbon neutral plan was announced in March 2009 shortly after the election of President Nasheed. Directly preceding Nasheed's formal announcement of the Maldives intent to be carbon neutral by 2019 was a private screening of the film *The Age of Stupid*, a film that Lynas co-wrote, acted in and served as science advisor for. This comes as no accident. The effective message is acutely summarized by Paul Roberts, International Media Advisor to the President, "So it wasn't a message that we're very vulnerable, but it was also that we want to show the way out of this mess by de-carbonizing the economy" (Interview with author, May, 2010). The same attitude is reflected in several other interviews, the change from a negative to a positive discourse,

from one of problems to one of opportunities, from blaming others to taking the lead on the issue of climate change. Again, International Media Advisor, Paul Roberts spoke on the branding effect of the carbon neutral pledge,

> The carbon neutral is a much more positive message. I mean, that we may have to leave here is sort of an image of a country where the people are rolling up their trouser legs because the water is coming. I think carbon neutral gives you a message – gives you an image of a country that's rolling up its shirt sleeves because it wants to get stuff done. So it's a lot more positive (Interview with author, May, 2010).

Clearly, the main point of pursuing a carbon neutral target is to create soft power with which to swing climate negotiations in the favor of the committing nation. Because the Maldives lacks 'hard' power (i.e. military, large economy), it also lacks the emissions incumbent to the creation of that power. Perhaps one of the reasons for the impasse in climate change negotiations is that countries with the most power are also those with the most to lose because their power is predicated upon their emissions and thus curbing those emissions would necessarily curb their power. While the implementation of the carbon neutral plan in the Maldives will certainly have tangible effects on the lived-everyday in the Maldives, it serves a much greater purpose in the production of geopolitical power. A member of the President's Advisory Council on Climate Change detailed the importance of the carbon neutral plan as a motivational tool:

> Building seawalls, doing this and that, but then the real answer is that none of this is ever going to stop unless the outside world cares about this actually. And the only way…we've come to a realization, and this is the reality. This is the political reality as well. Tree huggers are not going to stand it because people are not going to do it if they're going to lose…the whole argument of environment needs to be changed from a list of negatives to a list of positives and that's how economics works…so this has been sort of the President's attitude, moving forward with things like the carbon neutral plan (Interview with author, April, 2010).

Once again, it is obvious that the consensus within the Maldives government is moving from the accusatory geopolitics of the G77 grounded in ecological debt theory, to

a position of leadership on the issue of climate change thus magnifying their position in the global geopolitical imagination. Another member of the President's office spoke about the carbon neutral plan and the geopolitical goals of the Maldives. An extended portion of the interview is worth citing here at length.

> The former administration, even in the early 1980's, started talking about this. The former president, I think, his van, his convoy, was hit by tidal swells in – I think it was in 1987, if I remember correctly. So I mean, this was something that the Maldives have been talking about at international forums for many, many years, and that was the obvious approach you take – say look, we're on the front line. And if you don't do anything we're going down (Interview with author, April, 2010).

What we see from statements like the one above is the point of distinction between the past and present strategies for motivating global change. The past strategy was focused on negatives: "you are responsible", "your fault", etc. While the facts of these matters (differentiating responsibility for climate change) are still under heated debate, the Maldives has chosen to move past this to a new future in which they assume a leadership role, which could potentially lead to first-mover benefits. The frustration of government officials is obvious in the excerpt below, taken from an interview with a high-ranking Maldivian official.

> If you don't have confidence in international agreements…you shouldn't have to sail at the pace of the slowest ship. Because there are all these benefits of moving first…and the potential to be game changing. When you have the other countries trying to play catch-up, you don't want to be left out (Interview with author, May, 2010).

The Maldives is trying to move quickly and first. They want to be the first carbon-neutral state by 2019. But what possible benefit could this have? After all, there is a reason no other country in the world is carbon neutral: money. It costs a great deal of money to decarbonize an entire economy, particularly one run entirely on the energy production from imported oil and diesel fuels. The Maldives lacks the internal funds to

mitigate their own emissions. But even if the Maldives had the requisite monies to decarbonize their economy, Paul Roberts highlights the meagerness of just one commitment to carbon neutrality: "The fact of the matter is the West stopped burning carbon tomorrow 100%, and the developing countries carried on the current trajectory, you would still be looking at a 4-6 degree rise in temperatures over the next 100 years or so" (Interview with author, May, 2010).

The carbon neutral pledge first moved towards reality when the Maldives signed an agreement with La Compagnie Benjamin de Rothschild as a 'strategic partnership' to help the Maldives execute the carbon neutral plan (Rothschild Group, 2010). The carbon neutral plan includes three phases: first, performing a carbon audit of the Maldives to then generate a master plan of decarbonization in every sector of the economy and finally to secure investors who are willing to fund the necessary green technology projects to turn the Maldives carbon neutral. A subsidiary of La Compagnie Benjamin de Rothschild, BeCitizen, will be performing the carbon audit and fabricating the carbon master plan, due out next year. Minister of Investments for the Maldives, Mifzal Ahmed, spoke in an interview about how the Maldives provides an attractive investment destination because of its 'green' brand:

> The Maldives is a great case for investors to showcase their technology. To showcase their commitment to the fight against climate change, so there is to some extent a willingness of the private sector to come in and do these initiatives in the Maldives…We are hoping that the positive energy created by our President around this, the energy, the image…there is significant public relations advantage to come and say well we have this in the Maldives. You know we contributed to something very positive. It might not mean that they make a hell of a lot of return on it, but most of the companies that I have met so far say: "Hey, as long as we don't lose a chunk of money, we are willing to put something into."
> …
> Sometimes you run into really strange investment motives, well not strange but take for example a mutual fund that operates out of Australia. Australia's got like the 4th or 5th

largest funds under management in the world. Australian companies are very carbon heavy, you've got the big mining companies, Rio Tinto, all of these things. There is a growing consciousness amongst investors; at least private investors that they want to clean up their portfolios. So what do they do, well that portfolio can come and invest in an energy company based out of the Maldives, it might not provide them with a great return, but it provides them with that particular important green credential to their portfolio. So I have been approached by large funds in Australia saying: "Give us a good product and we will look into it" (Interview with author, May, 2010).

The success of the carbon neutral plan depends entirely on currently non-existent commitments from investors. While the Maldives want to become a showcase for clean energy technologies, they must do so by motivating private monies and investment. BeCitizen will sell their carbon neutral plan to investors with their novel idea of "Positive Economy" {see figure 6}. Positive economy is an approach by which companies get a return on investment, which at the same time produces 'natural capital' (BeCitizen, 2010, www.becitizen.com). The success of the carbon neutral plan in the Maldives largely hinges on how effectively they can sell the idea of positive economy and their 'green brand' to investors.

In actual fact, the Maldives contribution to global climate change is minute. While one can take into account air travel emissions for those coming on vacation to the Maldives, the amount of CO2 released related to the Maldives is truly negligible when viewed in a global context. But this lack of emissions implies a vastly more important topic, that is who is changing the environment? Who should be held accountable?

The Maldives argument is threefold: 1) they have done the least to cause climate change, 2) it will most negatively affect them and yet 3) they are doing the most to fix it. The third step, that is the carbon neutral plan, is the point of differentiation between the Maldives and many members of the global South.

The first two parts of the moral authority argument are common throughout climate change justice and ecological debt literatures as reviewed earlier. The novel aspect that has been added by the Maldives is the idea of a carbon neutrality plan. While the first two are articulated by many developing countries, the Maldives have attempted to differentiate themselves from the rest by assuming a leadership role on the topic and attempting to become carbon neutral. Many of the subjects in my interviews mentioned the concept of moral authority as it related to the Maldives position on the geopolitical stage. The following is excerpted from an interview with Dr. Simad Saed, a member in the President's Advisory Council on Climate Change, the mandate for which is to advise the President on the negotiating position of the Maldives at international meetings.

> If Maldives is sinking because actions taken by a particularly developed country that is so adamant on not doing anything about it because it will somehow dent their economy, does the people of the Maldives just like, uh, if someone gets hit by a car while standing on the road, would the person who hit or the car that got hit, that was parked, have a right to ask for some form of compensation? These are questions that need to be asked. If, I'm driving and if there's a parked car and I hit one way of saying why, why should I pay for it, it just happened to be there. But is that the kind of moral language we use in other countries? We are taught in – from school that if you hit someone from your own action you better pay for it or you better do what is right, we are not asked to just ignore and then move on just because we had to pay money, yes, that's exactly same with climate change. Others are progressing with their own economic agenda at speed, they do not even want to slow down, they do not want to even look at the site, to see what's going on, and then if there is a nation by the side who gets hit, what happens (Interview with author, May, 2010)?

This segment highlights the need for recompense. The Maldives will be forced to adapt to climate change with dollars and cents. Because they are not responsible for the damage caused their homeland, they have pointed to other countries that, as Dr. Simad puts it, are "driving the car". This is representative of the ecological debt position and while the argument for moral authority is not evidenced in Dr. Simad's comments he does hint at the moral questions that must be answered. A member of the President's

office described the logical thought process that was the impetus behind the argument from moral authority.

Climate change, of course, poses us with an existent central challenge in that if there isn't a global solution to this problem we go down. So we have to do everything in our power to make sure that a global solution to this problem is found. It was deemed that one really good way of doing this would be to take the moral high ground ourselves and say look, whether you're coming with us or not, we're going to go carbon neutral (Interview with author, April, 2010).

In this segment, further detail is revealed about the concept of moral authority or as stated above, "taking the moral high ground". Since much of the impasse at international climate negotiations is due to the G77 demanding cuts from industrialized countries that they are not willing to pursue themselves, the Maldives is attempting to short-circuit this argument by "walking the walk". Another member of the President's Advisory Council on Climate Change articulated the moral authority argument in total during a conversation about the carbon neutral plan.

We're not guilty, we're not guilty of polluting and environmental degradation but we're still willing to take a step ahead and say look, here is a solution. We are offering a solution why don't you accept it and no one can come and point fingers at us and say, look you guys are major polluters you know, and why are you saying this. But I think because we are the most vulnerable, one of the most vulnerable states, we have a right, we have a right to live, we don't pollute and clearly we don't have any agenda…so we don't have any reason other than survival (Interview with author, April, 2010).

With this evidence, it is clear that the Maldives intends for the carbon neutral target to not only to create for them soft power to use in these international negotiations, but also to provide a positive example to the rest of the world. If you can pursue carbon neutrality in the Maldives: a nation currently 100% dependant on oil imports, with a budget foundering because of previous odious expenditures and little green infrastructure in place, you can do it anywhere. So the Maldives have positioned themselves at the top

of the geopolitical-moral heap and rightly so as Paul Roberts summarizes: "It's got moral authority because it's done the least to cause a problem, it's the most threatened but yet it's still doing the most relatively to help fix things," (Interview with author, May, 2010). Other interview evidence corroborates the three-part argument for moral authority.

Climate change poses an existential security threat to the Maldives not only as a sovereign state but also as a nation of people. People everywhere in the low-lying atoll will increasingly see their livelihoods, houses and well-being jeopardized by climate change. The Maldives did not cause this to happen and must seek compensation or some form of redress to adapt to imminent climate change. Instead of simply stating this at every turn, they have decided, on the advice of Mark Lynas, to move forward with a carbon neutral plan, believed to be the catalyst for the reaction that will break apart the logjam of non-action in these international negotiations. While the carbon neutral plan will have a negligible impact on the Earth's total carbon budget, it does serve a political purpose, furnishing the Maldives with the requisite moral authority to punch above their weight in international negotiations, like Copenhagen, and participate in the crafting of policies on which many other states remain mute.

Conclusion

In my thesis, I make four arguments:

Firstly, I have showed that the Maldives has forwarded a unique argument from moral authority on the issue of climate change. Other states have not mobilized this argument before in the arena of global geopolitics. The Maldives is able to deploy this argument because, while they are vulnerable to climate change like other states, they

have committed to 100% carbon dioxide emission reduction by 2019. I have shown that this pledge was given not just to reduce the Maldives emissions, but more importantly to produce a previously nonexistent authority on the issue of climate change. This is crucial in that it informs a broader understanding of how SIDS could procede in the future. It remains to be seen if any other nations join the Maldives in their carbon neutral pledge.

Secondly, I argue that the Maldives meteoric rise to the forefront of the issue of global climate change is no accident. Indeed, the Maldives has stated their intention to become a key player on climate change globally (Maldives SAP, 2009, pp. 392). They have accomplished this goal with smart brand management and genius acts of political theatre (i.e. underwater cabinet meeting). This narrative of climate change in the Maldives has been produced by myriad actors and sometimes through events completely unrelated to climate change. I argue that while many inside and outside of the Maldives perceive them as to be 'punching above their weight' in global politics, this merely belies the common geopolitical imagination of power, that is by population and economic clout. I argue that the Maldives being at the forefront of the global climate change debate represents a shift in how power is produced and perceived in the global geopolitical imagination. My research shows that elites in the Maldivian state believe they should rightly hold the authority on this issue and thus be at the center of dictating global climate policy.

Thirdly, I have shown from secondary research that non-concretized Maldivian atolls could be resilient to projected sea level rise, persisting through even rapid changes in sea level. While this may be true, I argue that this point is academic only, as nearly all Maldivians inhabit islands that *are* concretized to some extent. Further research is

required to fully understand how the natural resilience of coral atolls can aid in adaptation projects. This could potentially eliminate the need for hard engineering solutions, substantially lowering the cost of adaptation.

Finally, I have attempted to answer the question of "how dominant scripts of geopolitics can be both displaced and re-situated in order to foreground the security of people on the ground, those subjects effaced by realist geopolitics and international relations" (Hyndman, 2004, pp.311). To this end, I have shown that the Maldives is re-situating the dominant scripts of geopolitics by mobilizing a novel argument, replacing traditional power discourses of population and economy with a discourse of existential human rights and "a country rolling up its shirt sleeves because it wants to get stuff done" (Interview with author, May 2010).

Acknowledgements:

This research was made possible by grants from The College of Arts and Sciences, The College of Social and Behavioral Sciences and the STARS Program. I would like to thank my advisor, Dr. Mathew Coleman for all his help over this yearlong project. Also I would like to thank Dr. David Porinchu for his guidance on the natural science portion of my research. Additionally, I would like to thank Kevin Grove and Zoe Pearson for welcoming me into their reading group that sparked my interest in this topic. Also, I would like to thank Ali Rilwan, Aminath Shauna and Ibrahim Rasheed as they made my fieldwork in Male' much easier. Last but not least, I would like to thank my wife Kelsey for all her support during this long and sometimes arduous process.

Works Cited

"About Maldives." from http://www.investmaldives.org/investment_environment/about_maldives.html.

"Foreign Policy." Retrieved March 20, 2010, from http://foreign.gov.mv/v2/menu.php?menu=3&submenu=Foreign%20Policy.

(1992). Framework Convention on Climate Change Rio Earth Summit. Rio de Janerio, Brazil, United Nations.

(1994). Declaration of Barbados. Global Conference on Sustainable Development of Small Island Developing States. Bridgetown, Barbados.

(2008). Promotion and protection of all human rights, civil, political, economic, social and cultural rights, including the right to development. United Nations General Assemby: Human Rights Council.

(2009). "About AOSIS." AOSIS: Alliance of Small Island States. Retrieved April 20, 2010, from http://www.sidsnet.org/aosis/about.html.

(2009). Alliance of Small Island States (AOSIS) Declaration on Climate Change. AOSIS High Level Summit on Climate Change. New York.

(2009). "From a negative economy to a positive economy: main stages." from http://www.becitizen.com/vision_econ_1.php?lang=en&currentid=19.

(2009) Maldives cabinet makes a splash. BBC UK Online. October 17, 2009. http://news.bbc.co.uk/2/hi/8311838.stm

(2009). Maldives National Strategic Action Plan: 2009 - 2013. T. P. s. O. Department of National Planning, UNDP Maldives Office. Male', Maldives.

(2010). "About Maldives." Retrieved May 1, 2010, from http://www.bluepeacemaldives.org/vulnerable/about.html.

(2010). "About the Group of 77." Retrieved August 4, 2010, from http://www.g77.org/doc/.

(2010). CIA World Factbook: Republic of Maldives, Central Intelligence Agency.

(2010). "Maldives." from http://www.un.org.mv/unrc/15.

(2010). "Maldives Department of Information Hompage." Retrieved March 15, 2010, from http://www.maldivesinfo.gov.mv/home/index.php.

(2010). Report of the Conference of the Parties on its fifteenth session, held in Copenhagen from 7 to 19 December 2009. Conference of the Parties. Copenhagen, Denmark, UNFCCC.

(2010). "The Government of the Maldives, La Compagnie Benjamin De Rothschild and BeCitizen team-up to implement Carbon neutral pledge." 2010, from http://www.edmond-de-rothschild.com/news/environment/46783700-240d-43ea-8713-d77605fd30ef.aspx.

(2010). "UNDP: Maldives." Retrieved May 20, 2010, from http://undp.org.mv/v2/.

Adger, W. N. (2001). "Scales of Governance and Environmental Justice For Adaptation and Mitigation of Climate Change." Journal of International Development **13**: 921-931.

Afeef, F. (2004). Tsunami. Male', Maldives.

Agrawala, S. (1998). "Context and Early Origins of the Intergovernmental Panel on Climate Change." Climatic Change **39**: 605-620.

Agrawala, S. (1998). "Structural and Process History of Intergovernmental Panel on Climate Change." Climatic Change **39**: 621-642.

Allen, M. (2003). "Liability for Climate Change." Nature.

Andonova, L., Michele Betsill, and Harriet Bulkeley (2009). "Transnational Climate Governance." Global Environmental Politics **9**(2).

Barnett, J. (2007). "The Geopolitics of Climate Change." Geography Compass **1**(6): 1361-1375.

Barnett, J. (2008). "Peace and Development: Towards a New Synthesis." Journal of Peace Research **45**(1): 75-89.

Barnett, J., Suraje Dessai and Michael Webber (2004). "Will OPEC lose from Kyoto Protocol?" Energy Policy **32**(18): 2077-2088.

Barnett, J. a. N. A. (2003). "Climate Dangers and Atoll Countries." Climatic Change **61**(321-337).

Barnett, J. a. N. A. (2007). "Climate change, human security and violent conflict." Political Geography **26**: 639-655.

Bierman, F. a. K. D. (2004). "Global Environmental Change and the Nation State." Global Environmental Politics **4**(1).

Cabanes, C., A. Cazenave, C. Le Provost (2001). "Sea Level Change from Topex-Poseidon altimetry for 1993-1999 and possible warming of southern oceans." Geophysical Research Letters **28**(1): 9-12.

Cazenave, A. a. W. L. (2010). "Contemporary Sea Level Rise." The Annual Review of Marine Science **2**: 145-173.

Church, J., et al (2008). "Understanding global sea levels: past, present and future." Sustain Sci **3**: 9-22.

Connolly, M. a. P. K. (1994). "Must it be the Rest Against the West?" Atlantic Monthly **274**(6): 61-84.

Cornelius, M. (2009). Book review: *Fairness in Adaptation to Climate Change (2006),* Adger, W.N., Paavola, J., Huq, S., Mace, M.J. Climatic Change **96**: 259-267.

Dabelko, G. D. (2008). Environmental Security Heats Up. ECSP Report.

Dalby, S. (1992). "Ecopolitical discourse: 'environmental security' and political geography." Progress in Human Geography **16**(4): 503-522.

Dalby, S. (1992). "Security, Modernity, Ecology: The Dilemmas of Post-Cold War Security Discourse." Alternatives **17**(1): 95-134.

Dalby, S. (2002). Environmental Security. Minneapolis, University of Minnesota Press.

Dalby, S. (2009). Security and Environmental Change. Cambridge, Polity Press.

Dalby, S. a. F. M. (1992). "Reconceptualising local community environment, identity, and threat." Area **29**(2): 99-108.

Dasgupta, S., et al (2009). "The impact of sea level rise on developing countries: a comparative analysis." Climatic Change **93**: 379-388.

Galtung, J. (1969). "Violence, peace, and peace research." Journal of Peace Research **6**(3): 167-191.

Gayoom, M. A. (1987). Address by His Excellency Mr. Maumoon Abdul Gayoom, President of the Republic of Maldives, before the United Nations General Assembly on the Issues of Environment and Development. United Nations General Assembly, New York, NY.

Gayoom, M. A. (1990). Address by His Excellency Mr. Maumoon Abdul Gayoom, President of the Republic of Maldives. General Debate of the Forty-Fifth Session of the United Nations General Assembly.

Gillespie, A. (2004). "Small Island States in the Face of Climatic Change: The End of the Line in International Environmental Responsibility." UCLA Journal of Environmental Law and Policy **22**(107): 107-129.

Goldstone, J. (2008). Flash Points and Tipping Points: Security Implications of Global Population Growth. ECSP Report.

Haraway, D. (1991). Simians, cyborgs, and women: the reinvention of nature.

Homer-Dixon, T. F. (1994). "Environmental Scarcities and Violent Conflict." International Security **19**(1): 5-40.

Hovi, J., Detlef F. Sprinz and Arild Underal (2009). "Implementing Long-Term Climate Policy: Time Inconsistency, Domestic Politics, International Anarchy." Global Environmental Politics **9**(3).

Hyndman, J. (2001). "Towards a feminist geopolitics." Canadian Geographer **45**(2): 210-222.

Hyndman, J. (2004). "Mind the gap: bridging feminist and political geography through geopolitics." Political Geography **23**: 307-322.

Jagers, S. a. J. S. (2003). "Climate Governance Beyond the State." Global Governance **9**: 385-399.

Kaplan, R. (1994). "The Coming Anarchy." Atlantic Monthly **273**(2): 44-76.

Kasa, S., Anne Gullberg and Gorild Heggelund (2008). "The Group of 77 in the international climate negotiations: recent developments and future directions." International Enviromental Agreements **8**: 113-127.

Kearns, G. (2009). Geopolitics and empire: the legacy of Halford Mackinder. Oxford, Oxford University Press.

Kench, P. S., R.F. McLean and S.L. Nichol (2005). "New model of reef-island evolution: Maldives, Indian Ocean." Geological Society of America **33**(2): 145-148.

Krasner, S. (1991). "Global Communication and National Power: Life on the Pareto Frontier." World Politics **43**(3): 336-366.

M.L. Parry, O. F. C., J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds) (2007). IPCC, 2007. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. IPCC, 2007. Fourth Assessment Report (AR4).

Malthus, T. (1798). An Essay on the Principle of Population. London.

Merrifield, M. (2010). Sea Level Change in the Maldives: In-Situ Data. C. Gordon. Columbus.

Morner, N. A. (2004). "The Maldives Project: a future free from sea-level flooding." Contemporary South Asia **13**(2): 149-155.

Morner, N. A. (2007). "Claim that sea level is rising is a total fraud." EIR.

Morner, N. A., Michael Tooley, Goran Possnert (2004). "New Perspectives for the future of the Maldives." Global and Planetary Change **40**: 177-182.

Muller, B., Niklas Hohne and Christian Ellermann (2009). "Differentiating (Historic) Responsibilities for Climate Change." Climate Policy **9**(6): 593-611.

Najam, A., Saleemul Huq and Youba Sokona (2003). "Climate negotiations beyond Kyoto: developing countries concerns and interests." Climate Policy **3**: 221-231.

Nordas, R. a. N. P. G. (2007). "Climate Change and Conflict." Political Geography **26**: 627-638.

Overpeck, J., et al (2006). "Paleoclimatic Evidence for Future Ice-Sheet Instability and Rapid Sea-Level Rise." Science **311**(5768): 1747-1750.

Paterson, M., David Humphreys, and Lloyd Pettiford (2003). "Conceptualizing Global Environmental Governance: From Interstate Regimes to Counter-Hegemonic Struggles." Global Environmental Politics **3**(2).

Peluso, N. a. Watts, M. (2001). Violent Environments. Cornell University Press, Ithica, NY.

Pettenger, M. E. (2007). Introduction: Power, Knowledge and the Social Construction of Climate Change. The Social Construction of Climate Change: Power, Knowledge, Norms, Discourses. M. E. Pettenger.

Raleigh, C. a. H. U. (2008). "Climate Change, Demography, Environmental Degradation, and Armed Conflict." ECSP Report.

Ramesh, R. (2008) Paradise almost lost: Maldives seek to buy a new homeland. The Guardian

Rasheed, I. (2010). Personal Communication. Maldives parlimentary system. C. Gordon.

Roberts, J. T. (2001). "Global Inequality and Climate Change." Society and Natural Resources **14**: 501-509.

Roberts, J. T. a. B. C. P. (2007). A Climate of Injustice Global Inequality, North-South Politics, and Climate Policy. Cambridge, Massachusetts, The MIT Press.

Schwarze, R. (2007). "Liability for Climate Change: The Benefits, the Costs, and the Transaction Costs."

Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds) (2007). IPCC, 2007. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report on the Intergovernmental Panel on Climate Change. IPCC, 2007. Fourth Assessment Report (AR4), Intergovernmental Panel on Climate Change.

Sparke, M. (2000). "Graphing the geo in geo-political: critical geopolitics and the re-visioning of responsibility." Political Geography **19**: 373-380.

Taylor, D. (2003). "Small islands threatened by sea level rise." Vital Signs.

Thompson, A. (2006). "Management under Anarchy: The International Politics of Climate Change." 2006 **78**: 7-29.

Webb, A. a. P. S. K. (2010). "The dynamic response of reef islands to sea level rise: evidence from multi-decadal analysis of island change in the central pacific." Global and Planetary Change.

Woodroffe, C. D. (2007). "Reef-island topography and the vulnerability of atolls to sea-level rise." Global and Planetary Change.

Woodworth, P. L. (2005). "Have there been large recent sea level changes in the Maldive Islands?" Global and Planetary Change **49**(no. 1-2:1-18).

Yamin, F. a. J. D. (2004). The International Climate Change Regime A guide to Rules, Institutions and Procedures. Cambridge, Press Syndicate of the University of Cambridge.

Index of Figures

Figure 1

Changes in Temperature, Sea Level and Snow Cover
(IPCC, 2007, Working Group I Summary for Policymakers, pp. 6)

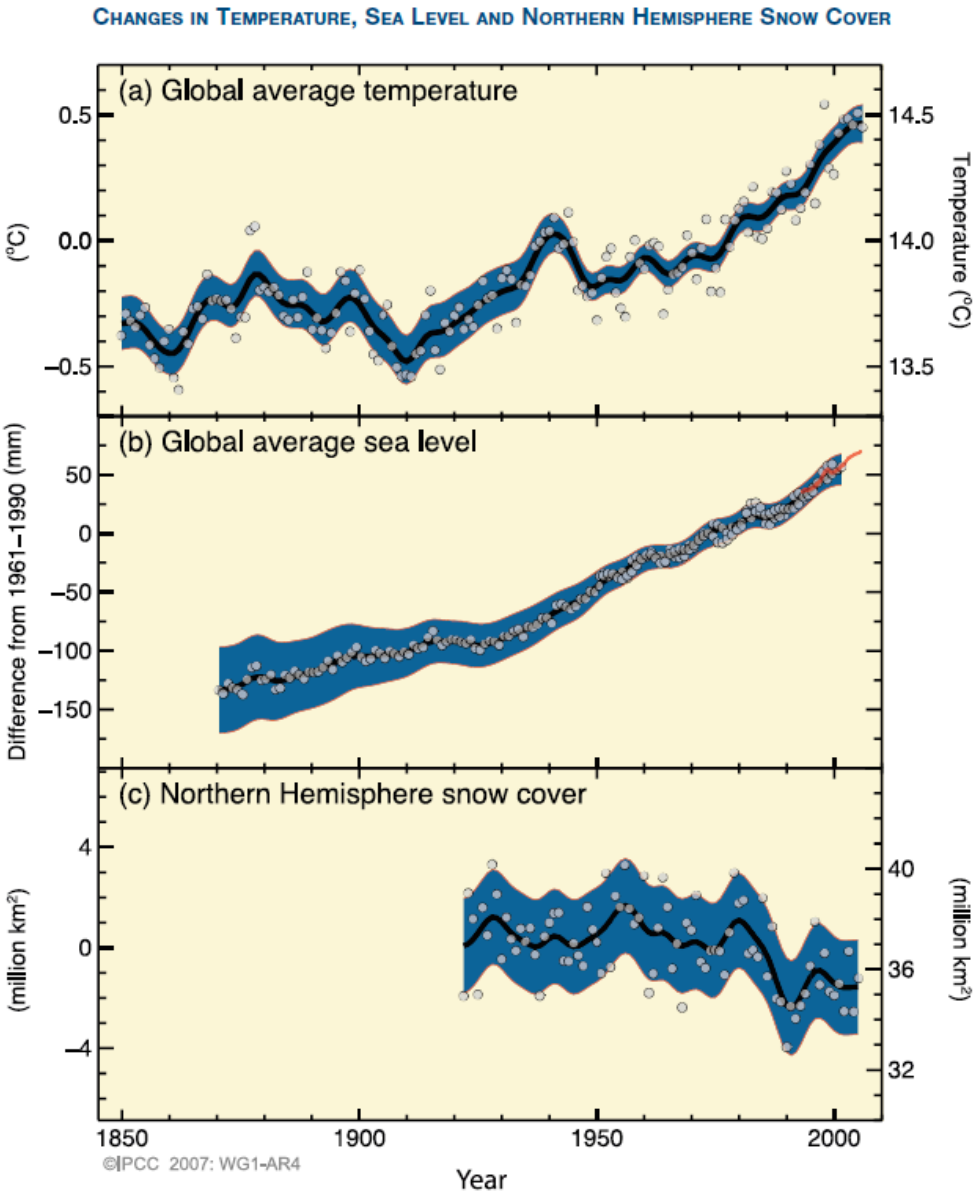


Figure 2

Source of sea level rise	Rate of sea level rise (mm per year) 1961–2003	1993–2003
Thermal expansion	0.42 ± 0.12	1.6 ± 0.5
Glaciers and ice caps	0.50 ± 0.18	0.77 ± 0.22
Greenland Ice Sheet	0.05 ± 0.12	0.21 ± 0.07
Antarctic Ice Sheet	0.14 ± 0.41	0.21 ± 0.35
Sum of individual climate contributions to sea level rise	1.1 ± 0.5	2.8 ± 0.7
Observed total sea level rise	1.8 ± 0.5[a]	3.1 ± 0.7[a]
Difference (Observed minus sum of estimated climate contributions)	0.7 ± 0.7	0.3 ± 1.0

Table note:
[a] Data prior to 1993 are from tide gauges and after 1993 are from satellite altimetry.

[10] Tropical cyclones include hurricanes and typhoons.

[11] The assessed regions are those considered in the regional projections chapter of the TAR and in Chapter 11 of this report.

Observed rate of sea level rise and estimated contribution from different sources (IPCC, 2007, Working Group I Summary for Policymakers, pp. 7)

Figure 3

Aerial Photograph of Male', Maldives. (Google Earth, Accessed August 2010)

Figure 4

Photograph of 2004 tsunami in Male', Maldives. Photo permission: Firas Afeef.

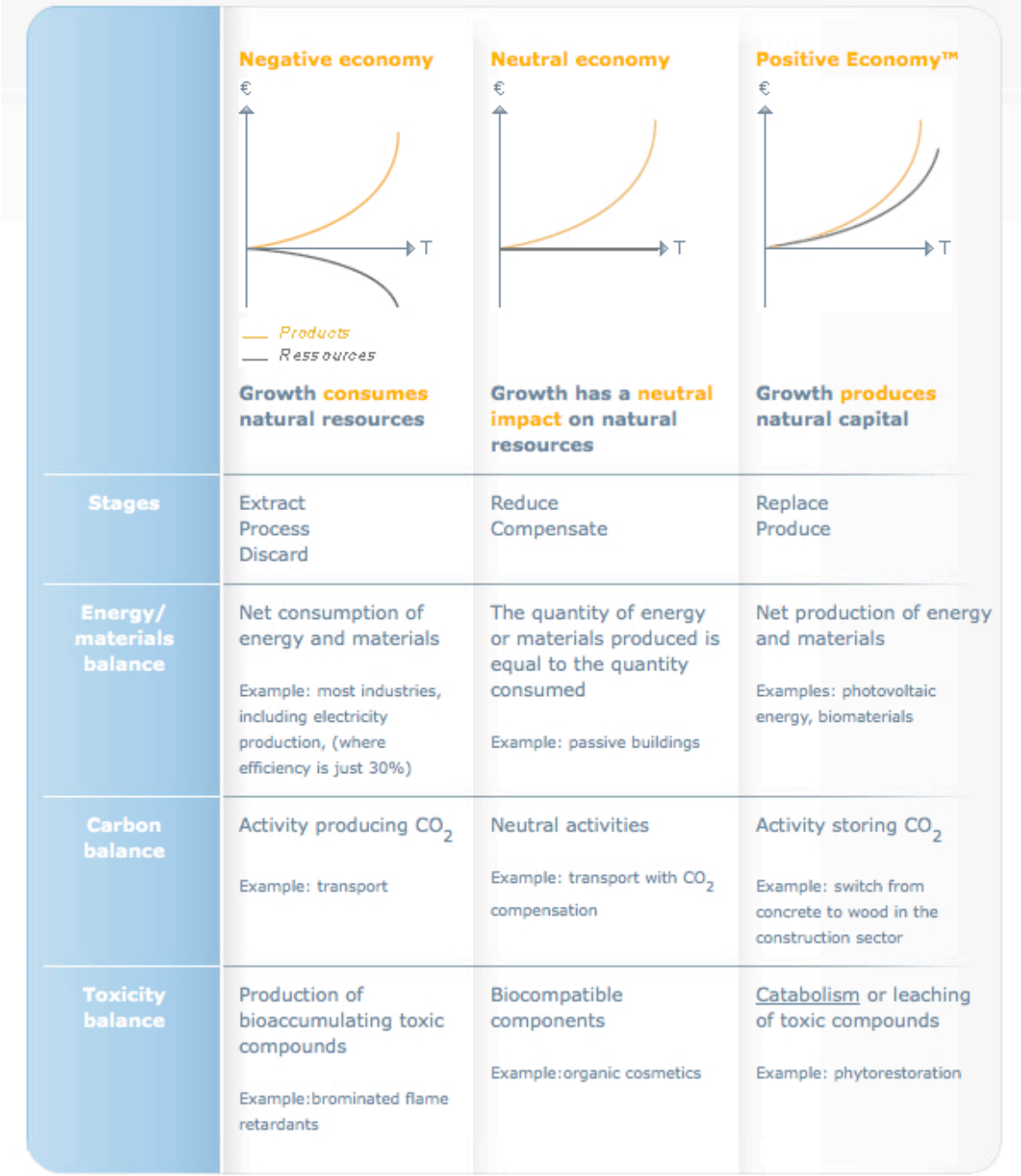
Figure 5

Table 1 A heterogeneous group: G77 emissions and income

GDP per capita	Emissions per capita	
	High	Low
High income and upper-middle income economies	(21) Argentina, OPEC, Malaysia, Saudi-Arabia, Singapore, South-Africa 5 AOSIS members	(46) 17 AOSIS members, Brazil.
Low income and lower-middle income economies	(1) Mongolia	(49) LDCs and 8 AOSIS members, India, Indonesia, China

Table describing the heterogeneity within the G77 with regards to emissions and economic status. (S. Kasa et al, 2008, pp. 117)

Figure 6



BeCitizen's explanation of their unique "Positive Economy" approach. (BeCitizen, Copyright 2009, http://www.becitizen.com/vision_econ_1.php?lang=en&currentid=19)